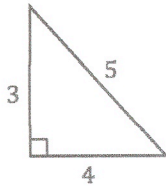


3-4-5 and Other Pythagorean Triples

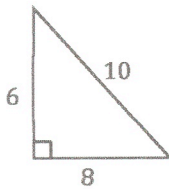
Q: Isn't there an easier way!!!!?? A: Well... sometimes...

Take the side lengths 3-4 and 5. Do these make a right triangle?

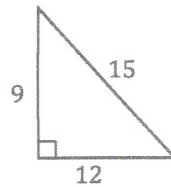


$$a^2 + b^2 = c^2$$

Multiply each side by two and you get 6-8-10, and by 3 you get 9-12-15, right? Do these work too?

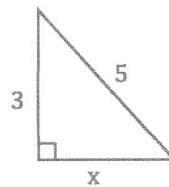
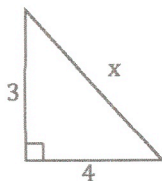


$$a^2 + b^2 = c^2$$



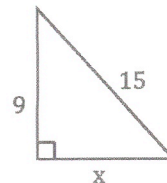
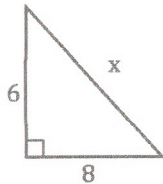
$$a^2 + b^2 = c^2$$

That means that 3-4-5 is a right triangle. So is any enlargement like times 2 or 3 or 7 or 100. So, 21-28-35 is really just a 3-4-5 times 7. In this case, the 7 is what we call the Scale Factor. Great, "so how does that make it easier?" you say. To find this just divide all the side lengths by the same number until you get to 3-4-5. Well, what if we had some triangles that had looked like these....

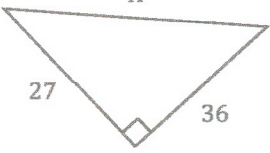


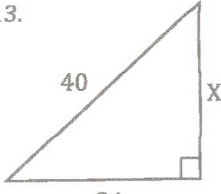
Oh sure, you could use the Pythagorean theorem, or you know that you have 3 and 4 for the legs of the first example. So, the hypotenuse must be 5 because that is the only number that works. Also, you have 5 for the hypotenuse in the second, and 3 for one leg so the other must be 4. Easy huh!

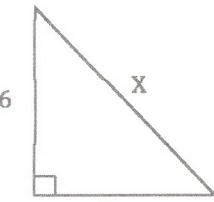
What about these...

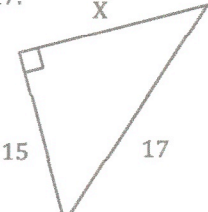


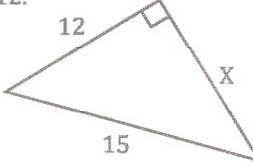
For these... write the kind of Pythagorean triple, the scale factor, and find the missing length.

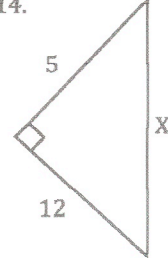
11.  $3-4-5$
 Scale factor = 9
 $x = 9 \cdot 5$
 $x = 45$

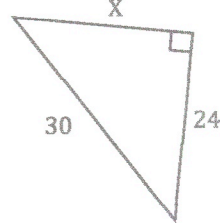
13. 

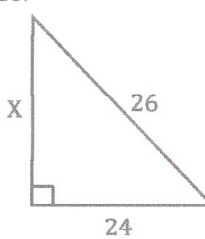
15. 

17. 

12. 

14. 

16. 

18. 

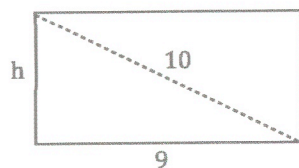
37

Bubble all the correct answers from above. Don't bubble incorrect answers.

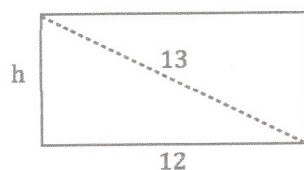
☐ 26 ☐ 24 ☐ 45 ☐ 16 ☐ 7 ☐ 5 ☐ 8 ☐ 13 ☐ 5 ☐ 10 ☐ 18 ☐ 28 ☐ 32 ☐ 10

Use the Pythagorean theorem or Pythagorean triples to find the missing dimension of each figure. (You'll need this skill later.)

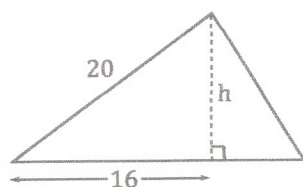
1. Find the height "h" of the rectangle.



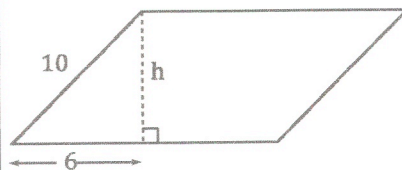
3. Find the height "h" of the rectangle.



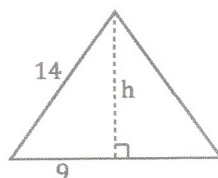
5. Find the height "h" of the triangle.



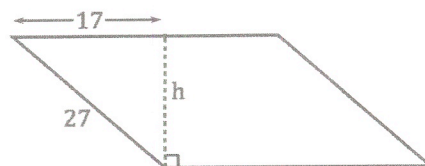
2. Find the height "h" of the parallelogram.



4. Find the height "h" of the triangle.



6. Find the height "h" of the parallelogram.



Bubble all the correct answers from above. Don't bubble incorrect answers.

☐ 10.7
 ☐ 8
 ☐ 115
 ☐ 12
 ☐ 5
 ☐ 20
 ☐ 21
 ☐ 10.7
 ☐ 4.4
 ☐ 11.7